

California Environmental Protection Agency



Vapor Recovery Equipment Defects List

Adopted: September 23, 2002
Amended: June 22, 2005
Amended: September 5, 2008

this page intentionally left blank

Vapor Recovery Equipment Defects List

Date of Issuance: September 5, 2008

GVR All Systems/any E.O.		
equipment	defects	verification procedure
(a) system	(1) any equipment defect which is identified in an Executive Order (E.O.) certifying a system pursuant to the Certification Procedures incorporated in Section 94011 of Title 17, California Code of Regulations	as set forth in the applicable E.O.
	(2) absence, improper installation, or disconnection of any component required to be used in the E.O.(s) that certified the system	direct observation
	(3) installation or use of any uncertified component	direct observation
	(4) dispensing rate greater than ten (10.0) gallons per minute (gpm) or less than the greater of five (5.0) gpm or the limit stated in the E.O. measured at maximum fuel dispensing	when determined as part of any ARB approved test method or direct measurement for 30 seconds minimum
	(5) phase I vapor poppet inoperative	direct observation
(b) nozzles	(1) nozzle automatic liquid shutoff mechanisms which malfunction in any manner	EPO No. 26-F-1/direct observation

note: Each defect in the tables in this list has a specific alphanumeric identification. Every identification has three parts: i) the Executive Order number for the table in which the defect appears (or GVR-general vapor recovery-for this "All Systems/any E.O." page only), ii) a sequential letter for the equipment with which the defect is associated, and iii) a sequential number for the defect itself. As the "equipment" column in the table changes, the defect number sequence that is associated with the specific equipment begins again with one ("1"). The same is true for the equipment letter: at the start of a new table the first identifying letter associated with the first equipment listed will be "a," the second "b," and so on. The Executive Order number (part i) is comprised of the characters which proceed the literal description of the system.

For example, the identification for the defect above which is written "installation or use of any uncertified component" is "GVR(a)(3)" and the last defect on the next table (page 2) is "G-70-7(d)(1)."

G-70-7 series Hasstech VCP-2 and VCP-2A AST Only		
equipment	defects	verification procedure
(a) system	(1) any fueling point associated with a vapor line disconnected and open to the atmosphere, including all fueling points at the facility if vapor lines are manifolded	direct observation
	(2) system not in compliance with the static pressure decay test criteria *	TP201.3 or equivalent
	(3) any grade of a fueling point not capable of demonstrating an air to liquid ratio compliance with its performance standard	TP201.5 or equivalent
	(4) pressure drop through the system exceeds one-half (0.50) inch water column at sixty cubic feet per hour (60 CFH)	TP201.4 or equivalent
(b) hoses	(1) any coaxial hose with a perforation exceeding one-eighth (0.13) inch diameter	direct measurement/ observation
	(2) any coaxial hose with slits or tears in excess of one-fourth (0.25) inch in length	direct measurement/ observation
(c) processing unit	(1) three consecutive unsuccessful attempts to ignite the incinerator which occur at least two hours after a bulk delivery *	direct measurement/ observation/system monitor observation
	(2) unit does not activate when the system pressure reaches or exceeds two (2.0) inches water column and occurs at least two hours after a bulk delivery *	direct measurement using storage tank pressure device
	(3) emissions which exceed Ringelmann one-half ($\frac{1}{2}$) or ten percent (10%) opacity and not attributable to a bulk delivery *	Method 9
	(4) vapor processing unit inoperative *	direct observation
(d) collection unit	(1) vacuum producing device inoperative *	direct observation

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation).

G-70-14 series Red Jacket			G-70-17 series Emco Wheaton			G-70-23 series Exxon		
G-70-25 series Atlantic Richfield			G-70-33 series Hirt			G-70-36 series OPW		
G-70-38 series Texaco			G-70-48 series Mobil			G-70-49 series Union		
G-70-52 series Red Jacket, Hirt			G-70-53 series Chevron			G-70-125 series Husky Model V		
G-70-134 series EZ-flow rebuilds			G-70-139 series Hirt AST			G-70-170 series EZ-flow rebuilds		
equipment	defects					verification procedure		
(a) nozzles	(1) any nozzle boot torn in one or more of the following manners: a triangular-shaped or similar tear one-half (0.50) inch or more on any side, or hole one-half (0.50) inch or more in diameter, or slit one (1.0) inch or more in length					direct measurement/ observation		
	(2) any faceplate or flexible cone damaged in the following manner: for balance nozzles and for nozzles for aspirator and eductor assist type systems, damage such that the capability to achieve a seal with a fill pipe interface is affected for one-fourth (25%) of the circumference of the faceplate (accumulated)					direct measurement/ observation		
	(3) flexible cone damaged in the following manner: for booted type nozzles for vacuum assist-type systems, more than one-fourth (25%) of the flexible cone missing					direct measurement/ observation		
	(4) insertion interlock mechanism which will allow dispensing when the bellow is uncompressed					direct observation/ GDF-09		
(b) hoses	(1) any coaxial balance hose with 100 ml or more liquid in the vapor path					direct measurement		
	(2) any hose with a visible opening					direct observation		
(c) processing unit	(1) vapor processing unit inoperative *					direct observation		
(d) vapor return lines	(1) pressure drop through the vapor path exceeds by a factor of two or more requirements specified in the Executive Order(s) that certified the system					TP201.4 or equivalent		

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation).

note: The identification scheme for defects listed in this table is the same three part alphanumeric identification (see page 1) as the other tables. However, the correct Executive Order number will be the one for the specific system in question. For example, the identification for the defect above which is written "any hose with a visible opening" will begin "G-70-" and end with "(b)(2)." On the Atlantic Richfield system it will be "G-70-25(b)(2)", on the Texaco system it will be "G-70-38(b)(2)", and so on.

G-70-175 series Hasstech VCP-3A AST		
equipment	defects	verification procedure
(a) system	<p>(1) any fueling point associated with a vapor line disconnected and open to the atmosphere, including all fueling points at the facility if vapor lines are manifolded</p> <p>(2) system not in compliance with the static pressure decay test criteria *</p> <p>(3) pressure drop through the system exceeds one-half (0.50) inch water column at sixty cubic feet per hour (60 CFH)</p>	<p>direct observation</p> <p>TP201.3 or equivalent</p> <p>TP201.4 or equivalent</p>
(b) OPW 11VAI steel spout	(1) less than six unblocked vapor collection holes	direct observation
(c) OPW 11VAI aluminum spout	(1) less than four unblocked vapor collection holes	direct observation
(d) Emco Wheaton A4500 nozzle	<p>(1) fewer than three unblocked vapor collection holes</p> <p>(2) any visible puncture or tear of the vapor guard/vapor seal assembly</p>	<p>direct observation</p> <p>direct observation</p>
(e) Husky V3 6201 nozzle	(1) all vapor collection holes blocked	direct observation
(f) Husky V34 6200-8	<p>(1) all vapor collection holes blocked</p> <p>(2) defective vapor valve</p>	<p>direct observation</p> <p>GDF-01/GDF-02</p>
(g) collection unit	<p>(1) any grade of a fueling point not capable of demonstrating an air to liquid ratio compliance with its performance standard</p> <p>(2) dispensing when the collection unit is disabled *</p> <p>(3) normal operating level at the inlet of the collection unit less than thirty (30) inches water column vacuum *</p>	<p>TP201.5 or equivalent</p> <p>direct observation/ system monitor observation</p> <p>direct measurement/ observation</p>
(h) processing unit	<p>(1) twenty (20) consecutive unsuccessful attempts to ignite the processing unit *</p> <p>(2) emissions which exceed Ringelmann one-half (½) or ten percent (10%) opacity and not attributable to a bulk delivery *</p> <p>(3) dispensing when the processing unit is disabled *</p> <p>(4) processing unit inoperative *</p>	<p>direct measurement/ observation/ system monitor observation</p> <p>Method 9</p> <p>direct measurement/ observation/system monitor observation</p> <p>direct observation</p>
(i) ECS-1 electronic control and status panel	(1) ratio of process unit/solenoid valve time less than nine tenths (0.90) *	direct measurement/ observation

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation)-

G-70-177 series Hirt VCS400-7		
equipment	defects	verification procedure
(a) system	(1) any fueling point associated with a vapor line disconnected and open to the atmosphere, including all fueling points at the facility if vapor lines are manifolded (2) pressure drop through the system exceeds one-half (0.50) inch water column at sixty cubic feet per hour (60 CFH) (3) any grade of a fueling point not capable of demonstrating an air to liquid ratio compliance with its performance standard (4) processing unit inoperative *	direct observation TP201.4 or equivalent TP201.5 or equivalent direct observation
(b) OPW 11VA-29 nozzle	(1) defective vapor valve (2) less than five unblocked vapor collection holes	GDF-01/GDF-02 direct observation
(c) hoses	(1) any visible puncture or tear equivalent to a diameter of 0.136 inches or greater	direct measurement/ observation

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation).

G-70-181 series Hirt VCS400-7 AGT (AST)		
equipment	defects	verification procedure
(a) system	(1) any fueling point associated with a vapor line disconnected and open to the atmosphere, including all fueling points at the facility if vapor lines are manifolded (2) pressure drop through the system exceeds one-half (0.50) inch water column at sixty cubic feet per hour (60 CFH) (3) any grade of a fueling point not capable of demonstrating an air to liquid ratio compliance with its performance standard (4) processing unit inoperative *	direct observation TP201.4 or equivalent TP201.5 or equivalent direct observation
(b) OPW 11VA-29 nozzle	(1) defective vapor valve (2) less than five unblocked vapor collection holes	GDF-01/GDF-02 direct observation
(c) hoses	(1) any visible puncture or tear equivalent to a diameter of 0.136 inches or greater	direct measurement/ observation

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation).

G-70-187 series Healy Model 400 ORVR AGT (AST)		
equipment	defects:	verification procedure
(a) nozzles	(1) any operating pressure range at the nozzle boot/fill-pipe interface less than one-half (0.50) inch water column vacuum or greater than one-fourth (0.25) inch water column pressure	EO G-70-187 Exhibit 5 test
	(2) defective vapor valve	EO G-70-191 Exhibit 2 vapor valve test or equivalent
	(3) any nozzle boot with a concatenation of all tears greater than one-half (0.50) inch in length	direct measurement/observation
(b) central vacuum unit	(1) product dispensed when the central vacuum unit is inoperative or disabled *	direct measurement/observation/TP201.5 or equivalent system monitor observation
	(2) system does not achieve an operating vacuum of sixty-five (65) inches water column for three consecutive dispensing episodes *	direct measurement/observation/system monitor observation
	(3) system does not achieve an operating vacuum of sixty-five (65) inches water column within a one hour period for any single dispensing episode *	direct measurement/observation/system monitor observation
	(4) vacuum level dropping below sixty (60) inches water column for more than three seconds after the system has reached sixty-five (65) inches water column, while dispensing is occurring *	direct measurement/observation/system monitor observation
	(5) vacuum level above ninety (90) inches water column while dispensing is occurring *	direct measurement/observation/system monitor observation
	(6) product dispensing when the non-restrictive ball valve installed in the vapor return line is closed *	direct measurement/observation
(c) system	(1) any fueling point associated with a vapor line disconnected and open to the atmosphere, including all fueling points at the facility if vapor lines are manifolded	direct observation
	(2) system not in compliance with the static pressure decay test criteria *	TP201.3 or equivalent
	(3) pressure drop through the system exceeds one-half (0.50) inch water column at sixty cubic feet per hour (60 CFH)	TP201.4 or equivalent
	(4) any venting through system monitor vent in excess of ten hours in any calendar day not attributable to a Phase I fuel delivery *	direct measurement/observation/system monitor observation

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation).

G-70-191 series Healy ORVR		
equipment	defects	verification procedure
(a) nozzles	(1) any Healy model 800 nozzle with a vapor collection boot which has one-half (50%) of the mini-boot faceplate or greater missing (2) defective vapor valve	direct measurement/ observation EO G-70-191 Exhibit 2 vapor valve test or equivalent
(b) system	(1) any grade of a fueling point not capable of demonstrating an air to liquid ratio compliance with its performance standard	TP201.5 or equivalent
	(2) any fueling point associated with a vapor line disconnected and open to the atmosphere, including all fueling points at the facility if vapor lines are manifolded	direct observation
	(3) system not in compliance with the static pressure decay test criteria *	TP201.3 or equivalent
	(4) pressure drop through the system exceeds one-half (0.50) inch water column at sixty cubic feet per hour (60 CFH)	TP201.4 or equivalent
	(5) inoperative vapor pumps *	direct observation in accordance with the Healy Systems VP1000 Dispenser Mounted Vacuum Pump Installation & Service Guide, Scheduled Maintenance Instructions, Weekly Inspection, bullet 4 et seq.

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation).

G-70-193 series Hill-Vac AST		
equipment	defects	verification procedure
(a) system	(1) fillpipe gauge pressure less than negative one (–1.0) inch or greater than two (2.0) inches water column	direct measurement/ observation
	(2) any fueling point associated with a vapor line disconnected and open to the atmosphere, including all fueling points at the facility if vapor lines are manifolded	direct observation
	(3) system not in compliance with the static pressure decay test criteria *	TP201.3 or equivalent
	(4) pressure drop through the system exceeds one-half (0.50) inch water column at sixty cubic feet per hour (60 CFH)	TP201.4 or equivalent
(b) nozzles	(1) a boot with any tear exceeding one-half (0.50) inch	direct measurement/ observation
	(2) faceplate damage such that the fillpipe interface is adversely affected for twenty-five percent (25%) or more of the circumference of the faceplate	direct measurement/ observation
(c) jet pump	(1) dispensing of gasoline when either jet pump is disabled	direct observation
	(2) failure to achieve operating vacuum of thirty-five (35) inches water column within five seconds after the system is activated, for three consecutive dispensing episodes	direct measurement/ observation
	(3) a vacuum level below fifteen (15) inches water column for more than three seconds after the system has reached thirty-five (35) inches water column while dispensing	direct measurement/ observation
	(4) a vacuum level above eighty-five (85) inches water column measured while dispensing to non-ORVR vehicles	direct measurement/ observation
	(5) product dispensing when any ball valve installed at the vapor return line connection to each Healy Model 100 jet pump is closed	direct measurement/ observation
(d) Liquid drop out pot	(1) opening drain valve at anytime other than when repair operations are underway	direct observation
	(2) product dispensing when any ball valve installed at the liquid drop pot in the liquid removal line is closed	direct measurement/ observation

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation).

G-70-200 series Oldcastle Buried Vapor Return Piping AST G-70-201 series Oldcastle Trenched Vapor Return Piping AST		
equipment	defects	verification procedure
(a) nozzles	(1) any nozzle boot torn in one or more of the following manners: a triangular-shaped or similar tear one-half (0.50) inch or more on any side, or hole one-half (0.50) inch or more in diameter, or slit one (1.0) inch or more in length	direct measurement/ observation
	(2) any faceplate or flexible cone damaged in the following manner: for balance nozzles and for nozzles for aspirator and eductor assist type systems, damage such that the capability to achieve a seal with a fill pipe interface is affected for one-fourth (25%) of the circumference of the faceplate (accumulated)	direct measurement/ observation
	(3) flexible cone damaged in the following manner: for booted type nozzles for vacuum assist-type systems, more than one-fourth (25%) of the flexible cone missing	direct measurement/ observation
	(4) insertion interlock mechanism which will allow dispensing when the bellow is uncompressed	direct observation/ GDF-09
(b) hoses	(1) any coaxial balance hose with 100 ml or more liquid in the vapor path	direct measurement
	(2) any hose with a visible opening	direct observation
(c) processing unit	(1) vapor processing unit inoperative *	direct observation

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation).

G-70-202 series Gilbarco Vapor Vac AST		
equipment	defects	verification procedure
(a) system	(1) any fueling point associated with a vapor line disconnected and open to the atmosphere, including all fueling points at the facility if vapor lines are manifolded	direct observation
	(2) both booted and unbooted nozzle types connected to the same vapor pump	direct observation
	(3) any grade of a fueling point not capable of demonstrating an air to liquid ratio compliance with its performance standard	TP201.5 or equivalent
(b) Catlow ICVN nozzle	(1) less than three unblocked vapor holes	direct observation
	(2) defective vapor valve	GDF-01/GDF-02
	(3) efficiency compliance device slit from base to the rim	direct observation
(c) Emco Wheaton A4505 nozzle	(1) less than three unblocked vapor holes	direct observation
	(2) defective vapor valve	GDF-01/GDF-02
	(3) one-eighth (13%) of vapor guard circumference missing	direct measurement/observation
(d) Emco Wheaton A4500 nozzle	(1) less than three unblocked vapor holes	direct observation
(e) Husky V34 6250 nozzle	(1) a one and one-half (1.5) inch or greater slit in vapor splash guard	direct measurement/observation
	(2) any hole greater than three-eighths (0.38) inch in vapor splash guard	direct measurement/observation
	(3) defective vapor valve	GDF-01/GDF-02
(f) Husky V3 6201 nozzle	(1) all vapor holes blocked	direct observation
(g) OPW 11VAI nozzle	(1) less than four unblocked vapor holes	direct observation
(h) OPW12VW nozzle	(1) all vapor holes blocked	direct observation
	(2) defective vapor valve	GDF-01/GDF-02
	(3) vapor escape guard with three-fourths (75%) of the circumference missing	direct measurement/observation

G-70-204 series Gilbarco Vapor Vac/OPW Vaporsaver		
equipment	defects	verification procedure
(a) system	<p>(1) pressure drop through the system exceeds one-half (0.50) inch water column at sixty cubic feet per hour (60 CFH) *</p> <p>(2) any fueling point associated with a vapor line disconnected and open to the atmosphere, including all fueling points at the facility if vapor lines are manifolded</p> <p>(3) system not in compliance with the static pressure decay test criteria *</p> <p>(4) any grade of a fueling point not capable of demonstrating an air to liquid ratio compliance with its performance standard</p> <p>(5) defective vapor valve</p>	<p>TP201.4 or equivalent</p> <p>direct observation</p> <p>TP201.3 or equivalent</p> <p>TP201.5 or equivalent</p> <p>GDF-01/GDF-02</p>
(b) Catlow ICVN nozzle	<p>(1) less than three unblocked vapor holes</p> <p>(2) efficiency compliance device slit from base to the rim</p>	<p>direct observation</p> <p>direct observation</p>
(c) Emco Wheaton A4505 nozzle	<p>(1) less than three unblocked vapor holes</p> <p>(2) one-eighth (1/8) of vapor guard circumference missing or equivalent cumulative damage</p>	<p>direct observation</p> <p>direct measurement/observation</p>
(d) Husky V34 6250 nozzle	<p>(1) a one and one-half (1.5) inch or greater slit in vapor splash guard or equivalent cumulative damage</p> <p>(2) any hole greater than three-eighths (3/8) inch in vapor splash guard or equivalent cumulative damage</p>	<p>direct measurement/observation</p> <p>direct measurement/observation</p>
(e) OPW12VW nozzle	<p>(1) all vapor holes blocked</p> <p>(2) vapor escape guard with three-fourths (3/4) of the circumference missing or equivalent cumulative damage</p>	<p>direct observation</p> <p>direct measurement/observation</p>
(f) vapor processor	<p>(1) vapor processor inoperative for more than 24 consecutive hours *</p>	<p>direct observation/ G-70-204 Exhibit 2</p>

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation).

G-70-209 series Dresser/Wayne Vac/Arid Technologies Permeator		
equipment	defects	verification procedure
(a) system	<p>(1) any splash guard that interferes with the operation of a vapor escape guard (VEG) or vapor splash guard (VSG) unit</p> <p>(2) any grade of a fueling point not capable of demonstrating an air to liquid ratio compliance with its performance standard</p> <p>(3) any fueling point associated with a vapor line disconnected and open to the atmosphere, including all fueling points at the facility if vapor lines are manifolded</p> <p>(4) system not in compliance with the static pressure decay test criteria *</p> <p>(5) pressure drop through the system exceeds one-half (0.50) inch water column at sixty cubic feet per hour (60 CFH)</p> <p>(6) defective vapor valve</p>	<p>direct measurement/observation</p> <p>TP201.5, G-70-209 Exhibit 5, or equivalent</p> <p>direct observation</p> <p>TP201.3 or equivalent</p> <p>TP201.4 or equivalent</p> <p>GDF-01/GDF-02</p>
(b) permeator	(1) permeator inoperative for more than 24 consecutive hours	direct observation/
(c) OPW 12VW nozzle	(1) all vapor holes blocked	direct observation
	(2) any VEG damaged such that at least three-quarters (75%) of the circumference is missing	direct measurement/observation
(d) Husky V34 6250 nozzle	(1) any VSG damaged such that at least a one and one-half (1.5) inch slit has developed	direct measurement/observation
	(2) any VSG flange portion that does not make contact with or cover the entire fill-pipe opening	direct measurement/observation
	(3) any VSG with a hole greater than three-eighths (0.38) inch	direct measurement/observation
(e) Emco Wheaton A4505 nozzle	(1) less than three unblocked vapor holes	direct observation
	(2) any vapor guard (VG) damaged such that at least one-eighth (13%) of the circumference is missing	direct measurement/observation
(f) Catlow ICVN and Richards Astrovac nozzles	(1) less than three unblocked vapor holes	direct observation
	(2) any efficiency compliance device damaged with a slit from the base to the rim	direct observation

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation).

VR-201 series Healy Phase II EVR System		
equipment	defects	verification procedure
(a) nozzles	(1) defective vapor valve	TP-201.2B or equivalent or VR-201 Exhibit 7
	(2) any fueling point whose V/L ratio is determined to be at or below 0.80	VR-201 Exhibit 5
(b) system	(1) inoperative vapor pumps *	direct observation in accordance with the Healy IOMM, Scheduled Maintenance, section 1.1 paragraph 3 et seq.
(c) clean air separator	(1) clean air separator static pressure performance failure *	VR-201 Exhibit 4
	(2) clean air separator not in the proper operating configuration *	direct observation shown in VR-201 Exhibit 2
(d) dispenser	(1) any dispenser with a dispenser piping test valve in the closed position	direct observation

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation).

VR-202 series Healy Phase II EVR System Including ISD		
equipment	defects	verification procedure
(a) nozzles	(1) defective vapor valve	TP-201.2B or equivalent or VR-202 Exhibit 7
	(2) any fueling point whose V/L ratio is determined to be at or below 0.80	VR-202 Exhibit 5
(b) system	(1) inoperative vapor pumps *	direct observation in accordance with the Healy IOMM, Scheduled Maintenance, section 1.1 paragraph 3 et seq.
(c) clean air separator	(1) clean air separator static pressure performance failure *	VR-202 Exhibit 4
	(2) clean air separator not in the proper operating configuration *	direct observation shown in VR-202 Exhibit 2
(d) dispenser	(1) any dispenser with a dispenser piping test valve in the closed position	direct observation

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation).

VR-203 series VST Phase II EVR System sans ISD		
equipment	defects	verification procedure
(a) nozzle	(1) more than 30 percent (30%) of a nozzle face seal is missing (e.g., a triangular or similar shape in which greater than two and one half (2.5) inches of the face seal circumference is missing (accumulated))	direct measurement/ observation
	(2) more than 0.375 square inches of a nozzle vapor collection sleeve is missing (e.g., a rectangular shape of greater than nine sixteenths (9/16) inch or more on each side, a circular shape of eleven sixteenths (11/16) inch or more in diameter, or a triangular shape of seven eighths (7/8) inch on the side	direct measurement/ observation
	(3) total slit length in the convolution exceeds 18.0 inches	direct measurement/ observation
	(4) insertion interlock mechanism which will allow dispensing when the convolution is uncompressed	direct observation/ GDF-09
	(5) defective vapor valve	VR-203 Exhibit 10
	(6) vapor valve leak rate exceeds 0.07 cubic feet per minute at a pressure of two (2) water column inches	TP-201.2B
(b) hoses	(1) 175 ml or more liquid in the vapor path	direct measurement/ sections 6.1 to 6.5 of VR-203 Exhibit 5
	(2) any hose with a visible opening	direct observation
(c) processing unit	(1) unit inoperative *	direct observation
	(2) ball valves are not locked in the proper operating configuration as shown in Figure 2B-2 *	direct observation
	(3) unit is not on or in the automatic vapor processor mode	diagnostic section of the Pressure Measurement Control (Section 16) of IOM
	(4) processor alarms for emission factor are activated for two consecutive 24 hour periods	direct observation
	(5) unit fails to activate when the UST pressure is less than or equal to 0.4 water column inch	VR-203 Exhibit 9
	(6) hydrocarbon concentration exceeds 12 percent (12%)	vapor processor status report
(d) vapor return lines	(1) pressure drop through the vapor path exceeds five (5.00) water column inches at a flow rate of 60 cubic foot per hour (CFH) and eight (8.00) water column inches at a flow rate of 80 CFH	TP201.4 Methodology 1 or equivalent

* When the identified defect is detected in the listed equipment, the defect determination applies to all affected interrelated systems (which may include all systems at the motor vehicle fueling operation).

Defect Identification Methods Used In the Verification Procedure Column

1. TP201.5: Determination (by Volume Meter) of Air to Liquid (A/L) Volume Ratio of Vapor Recovery Systems of Dispensing Facilities, Adopted April 12, 1996
2. TP201.4: Determination of Dynamic Pressure Performance of Vapor Recovery Systems of Dispensing Facilities
3. TP201.3: Determination of Two-Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities
4. GDF-01: Bag Test for Multi-Nozzle Vacuum Assist Systems
5. Method 9: 40 Code Federal Regulations Part 60 Appendix A: Reference Method 9/ EPA Section 3.12 Visible Determination of the Opacity of Emissions from Stationary Sources
6. G-70--187 Exhibit 5: Fillneck Vapor Pressure Regulation Fueling Test
7. EPO No. 26-F-1: Vapor Recovery Systems Field Compliance Testing
8. GDF-02: Bag Test for Single-Nozzle Vacuum Assist Systems
9. GDF-09: Phase II Balance System Nozzle Insertion Interlock Operation Determination
10. G-70-191 Exhibit 2: Specifications for the Healy ORVR Phase II Vapor Recovery System (4.a-4.d)
11. G-70-204 Exhibit 2: System Specifications/Vaporsaver (1.A-1.D)
12. G-70-209 Exhibit 5: Determination (by Volume Meter) of Air to Liquid Volume Ratio of Vapor Recovery Systems of Dispensing Facilities
13. VR-201 Exhibit 4: Determination of Static Pressure Performance of the Healy Clean Air Separator
14. VR-201 Exhibit 5: Vapor to Liquid Volume Ratio for Healy Phase II EVR System
15. VR-201 Exhibit 7: Nozzle Bag Test Procedure
16. VR-202 Exhibit 4: Determination of Static Pressure Performance of the Healy Clean Air Separator
17. VR-202 Exhibit 5: Vapor to Liquid Volume Ratio for Healy Phase II EVR System
18. VR-202 Exhibit 7: Nozzle Bag Test Procedure
19. VR-203 Exhibit 10: Nozzle Bag Test Procedure
20. VR-203 Exhibit 5: Liquid Removal Test Procedure
21. VR-203 Exhibit9: Determination of VST Processor Activation Pressure